

Sub-theme : Ocean Observing System

Ocean Observation on SST Variability and Sub-Surface Spatial Analysis off The North Papua (West End Pacific), the Fate of El_Nino 1997 & 2007 and La Nina 2002 : Field Measurement, TRITON Buoy and MODIS Satellite Data

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ABSTRACT

The increasing need to introduce and emphasis the analysis of SST and its sub-surface layers of deep water temperature (both horizontal and vertical) profile to analyze up-welling process and its relationship to its seasonal variability and spatial distribution was inevitable. Especially to avoid the misleading interpretation of using only sea surface temperature data for deep water fish biomass distribution analysis, etc.

Field SST data of July – August 1997 was field measurement by CTD (Conductivity-Temperature-Depth) sensors on board of RV. BARUNA JAYA IV with accuracy of 0.01 °C. Field SST data of 2002 and 2007 was derived from TRITON Buoy data base with permission of Jamstec-Japan. MODIS satellite SST of the same period was derived from processed MODIS image data. All field SST data was processed into a spatial SST layer using Er_Mapper (Licensed user) software, and overlaid on the bathymetric layer.

Average daily SST east monsoon 1997 (El Nino event) was 28.46°C, where as presumably La Nina event 2002 : the average daily SST was 29.75°C and for 2007 was : 29.83°C indicates higher SST than 1997 and 2002. Average daily SST of west monsoon 2007 was 29.69°C. Daily SST of 2007 east monsoon was about 0.08 - 0.5°C higher than same season of 2002 (TRITON Buoy data). Correlation coefficient (r) between MODIS-SST and TRITON Buoy-SST for east monsoon 2002 was 0.5789; and 0.599 for west monsoon and 0.55 for east monsoon 2007. The paper analyze and revealed the fate / occurrence of up welling zone in adjacent of Halmahera islands through the analysis based on multi-layer and RGB-method of both horizontal and vertical temperature of the field measurement 1997 data. Spatial multi-depth-layer approach is important for the analysis of tuna spatial distribution pattern

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